BREAKING ADVANCES

6377 Highlights from Recent Cancer Literature

REVIEWS

6379 Decoding the Histone Code: Role of H3K36me3 in Mismatch Repair and Implications for Cancer Susceptibility and Therapy
Guo-Min Li

6384 Real-time Liquid Biopsy in Cancer Patients: Fact or Fiction?
Klaus Pantel and Catherine Alexa-Panabieres

MEETING REPORT

6389 The Hippo Tumor Suppressor Network: From Organ Size Control to Stem Cells and Cancer
Georg Halder and Fernando D. Camargo

PRIORITY REPORT

6393 Erythropoietin Activates Cell Survival Pathways in Breast Cancer Stem-like Cells to Protect Them from Chemotherapy
Matilde Todaro, Alice Turdo, Monica Bartucci, Flora Iovino, Rosanna Dattilo, Marco Biffoni, Giorgio Stassi, Giulia Federici, Ruggero De Maria, and Ann Zeuner

INTEGRATED SYSTEMS AND TECHNOLOGIES

6401 A Transcriptional and Metabolic Signature of Primary Aneuploidy Is Present in Chromosomally Unstable Cancer Cells and Informs Clinical Prognosis
Jason M. Sheltzer

MICROENVIRONMENT AND IMMUNOLOGY

6413 GM-CSF Promotes the Immunosuppressive Activity of Glioma-Infiltrating Myeloid Cells through Interleukin-4 Receptor-α
Gary Kohanbash, Kayla McKavney, Masashi Sakaki, Ryo Ueda, Arlan H. Mintz, Nduka Amankulor, Mitsugu Fujita, John R. Ohlfest, and Hideho Okada

6424 Substance P Autocrine Signaling Contributes to Persistent HER2 Activation That Drives Malignant Progression and Drug Resistance in Breast Cancer
Susana Garcia-Recio, Gemma Fuster, Patricia Fernandez-Nogueira, Eva M. Pastor-Arroyo, So Yeon Park, Cristina Mayordomo, Elisabet Ametller, Mario Mancino, Xavier Gonzalez-Farre, Hege R. Russnes, Pablo Engel, Domiziana Costamagna, Pedro L. Fernandez, Pedro Gascon, and Vanessa Almendro

MOLECULAR AND CELLULAR PATHOBIOLOGY

6435 miR-153 Supports Colorectal Cancer Progression via Pleiotropic Effects That Enhance Invasion and Chemotherapeutic Resistance
Lei Zhang, Karen Pickard, Veronika Jenei, Marc D. Bullock, Amanda Bruce, Richard Mitter, Gavin Kelly, Christos Paraskeva, John Strefford, John Primrose, Gareth J. Thomas, Graham Packham, and Alex H. Mirnezami

Previews: These findings reveal the operation of immnosuppressive mechanisms in the glioblastoma microenvironment driven by GM-CSF, a factor used in the clinic to elevate white blood cell counts in patients, suggesting clinical risks arising from its use.

Previews: The work illustrates the oncogenic cooperation between HER2 and a substance P receptor involved in pain signaling, providing a novel link between cancer inflammation and progression that might be targeted by substance P antagonists being explored in the clinic.

Previews: MicroRNAs that facilitate progression and mediate drug resistance in advanced cancers have increased appeal as treatment targets, given the more frequent lack of effective therapies at late stages of disease.
Mutually Activated PIK3CA H1047R Cooperates with BRAF V600E to Promote Lung Cancer Progression
Christy L. Trejo, Shon Green, Victoria Marsh, Eric A. Collisson, Gioia Iezza, Wayne A. Phillips, and Martin McMahon

Précis: These findings deepen the in vivo evidence that MAPK and PI3K signaling cooperates in mediating the development and progression of KRAS-mutated lung cancer, suggesting combination therapies to treat this disease.

Photodynamic Therapy of Murine Mastocytoma Induces Specific Immune Responses against the Cancer/Testis Antigen P1A
Pawel Mroz, Fatma Vatansever, Angelika Muchowicz, and Michael R. Hamblin

Précis: Effective photodynamic therapy used to treat certain cancers may act as antigen-specific immunotherapy.

A Small-Molecule Blocking Ribonucleotide Reductase Holoenzyme Formation Inhibits Cancer Cell Growth and Overcomes Drug Resistance

Précis: These findings address deficiencies in existing drugs that block ribonucleotide reductase, offering preclinical validation of a promising new class of inhibitors against this valid target that could find broad use to treat many human cancers.

Antitumor Efficacy of a Monoclonal Antibody That Inhibits the Activity of Cancer-Associated Carbonic Anhydrase XII
Gabor Gondi, Josef Myśliwietz, Alzbeta Hulíková, Jian Ping Jen, Pawel Swietach, Elisabeth Kremer, and Reinhard Zeidler

Précis: This study offers a preclinical proof-of-concept for immune targeting a cell surface carbonic anhydrase that is widely expressed in human cancer as a general therapeutic strategy.

MYC Phosphorylation at Novel Regulatory Regions Suppresses Transforming Activity
Amanda R. Wasylishen, Michelle Chan-Seng-Yue, Christina Rros, Dharmendra Dingar, William B. Tu, Manpreet Kalkat, Pak-Kei Chan, Peter J. Mullen, Ling Huang, Natalie Meyer, Brian Raught, Paul C. Bourtros, and Linda Z. Penn

Précis: MYC phosphorylation mutants with super-transforming activity that were identified in this study point the way toward new therapeutic targets to attack MYC by a backdoor approach.

Nitric Oxide Production Upregulates Wnt/β-Catenin Signaling by Inhibiting Dickkopf-1
Qiang Du, Xinglu Zhang, Quan Liu, Xianghong Zhang, Christian E. Bartels, and David A. Geller

Précis: In addressing the complex role of nitric oxide in cancer, this study furthers evidence of an oncogenic contribution that is mediated by a mechanism that stimulates Wnt/β-catenin signaling, a central pathway for carcinogenesis.

Correction: Breast Tumor Kinase (Brk/PTK6) Is a Mediator of Hypoxia-Associated Breast Cancer Progression
miR-153 leads to increased invasiveness in colorectal cancer. Using mouse tumor xenografts, it was found that colorectal tumors with inhibition of miR-153 show a clean edge of tumor spheroid and fewer invasive fronts into the surrounding stroma (magnification, ×400) in contrast to controls with a more locally invasive tumor phenotype. For details, see article by Zhang and colleagues on page 6435.